

GRAPHICAL ADMINISTRATION UTILITIES

This appendix presents an overview of the graphical administration tools that accompany both the Gnome and the KDE Desktop interfaces. Although this appendix is not exhaustive—a nearly impossible goal given the rate of software development in these areas—the utilities described should give you a good idea of what is currently available on popular Linux distributions (nearly all of which use either Gnome or KDE). This appendix focuses on the Red Hat Linux distribution. Most of the KDE utilities are included with any product that uses KDE, such as SuSE Linux, Corel Linux, OpenLinux, or Mandrake Linux.

Many of the utilities described in this appendix have also been described to some extent within the main text of the book. Those discussions, however, have focused on using the utility for a particular task rather than providing an overview of the capabilities of numerous programs. This appendix does just that.

Updated versions of Linux distributions and of the Gnome and KDE Desktops are likely to include additional tools that are not mentioned here. In particular, many KDE system administration utilities that are currently in development are mentioned here only briefly or not at all. As these utilities become more stable, they will be included with standard KDE distributions, allowing administrators to rely on graphical configuration tools for more of their system management tasks. For details, you should visit the Web sites www.gnome.org and www.kde.org and browse the software listing (and download information) provided.



Not all of the utilities mentioned on the Gnome and KDE Web sites are fit for general consumption. Many of them are still being developed. These utilities may crash your system or may not even run. Look for information about the status of a utility (such as a version number, or a designation of Alpha- or Beta-quality software) before risking any production system on a new administration tool.

Many excellent graphical utilities are available for the X Window System that do not rely on the Gnome or KDE Desktop. A few of these, such as `xload`, are mentioned in the main text of this book. The integrated nature of the Gnome and KDE utilities, as well as the continuing rapid rate of software development that they enjoy, makes them preferable in some ways to generic X Window System utilities. Nevertheless, if you are interested in locating a graphical utility that you do not see mentioned in this appendix, consult an online index or archive of Linux utilities. For example, search www.freshmeat.net for a subject or keyword, or browse in the FTP site <ftp://metalab.unc.edu/pub/Linux> subdirectory.

GNOME UTILITIES

Gnome itself does not have numerous specialized graphical administration utilities, probably because it was developed with the idea of relying on the LinuxConf project, which was being developed at about the same time by the same group of developers (that is, developers sponsored by Red Hat Software). The LinuxConf program therefore deserves special consideration as a graphical administration tool.

LinuxConf is the main configuration platform for Red Hat Linux; other distributions that are not based on Red Hat have not adopted LinuxConf, but it is a powerful tool. LinuxConf is available on the Gnome `system` menu. One of its greatest strengths is its ability to work with configuration files via several interfaces:

- Text mode (in any character-mode screen)
- Graphical (standard X Window System in Gnome)
- Web based (via a remote browser)



A tool with design goals similar to those of LinuxConf is the Caldera Open Administration System, or COAS. This utility also aims to be accessible via text, graphical, and browser interfaces, and to provide numerous configuration options in a common interface. The development of COAS, intended as an OpenSource project and led by capable software engineers, has stalled to some degree, and COAS is not able to boast of the large list of configuration tools that LinuxConf can. COAS is not discussed in this appendix, but it is available on the KDE main menu of Caldera OpenLinux products.

Each time you select an item from the voluminous list of options on the left side of the LinuxConf screen, you see a panel appear on the right side of the screen with options to select from. When you have finished with one panel, you can choose `OK` or `Cancel` to close that panel. If you visit multiple panels without closing each one, they remain open. Therefore, when you close one, another that you had previously opened is visible. A set of arrows at the top right of the LinuxConf window lets you move between the panels that you have opened by clicking on items in the left side of the window.

LinuxConf provides an impressive list of configuration tools. But not all of these tools are completely stable or usable. Exercise caution when you first start using a LinuxConf feature

until you have ascertained whether it works as you expect it to. Keep in mind that you must be logged in as `root` in order to access the system configuration files with LinuxConf; as always when logged in as `root`, you should be especially careful not to damage your system unintentionally.

The following list summarizes features included in LinuxConf menus. These are listed in the approximate order in which they appear in the left side of LinuxConf, though the sheer number of items and seemingly arbitrary arrangement of configuration tools makes locating any particular tool a challenge. Figures are provided for several representative screens.



Many of the topics listed here are related to networking and so were not discussed (or perhaps even mentioned) in this book.

- Network card configuration (see Figure C-1)

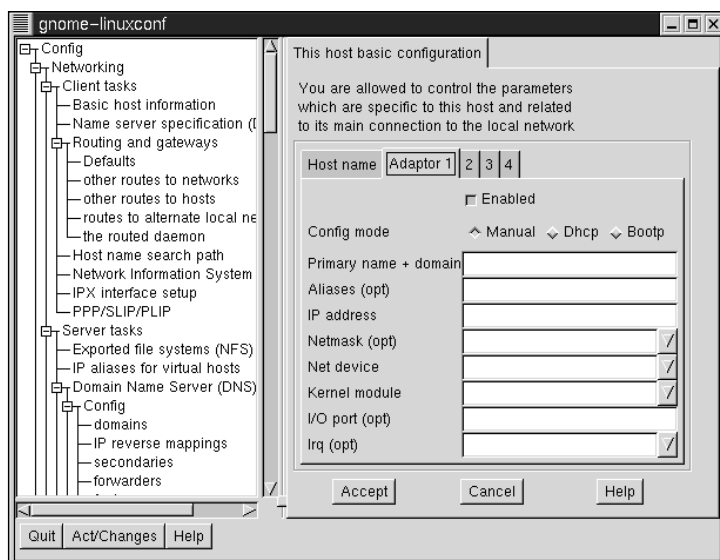


Figure C-1 Networking configuration in LinuxConf

- Network routing configuration
- NFS (remote UNIX file system access) configuration
- DNS (Domain Name Service) configuration

- Apache Web server configuration, including several panels of options (see Figure C-2)

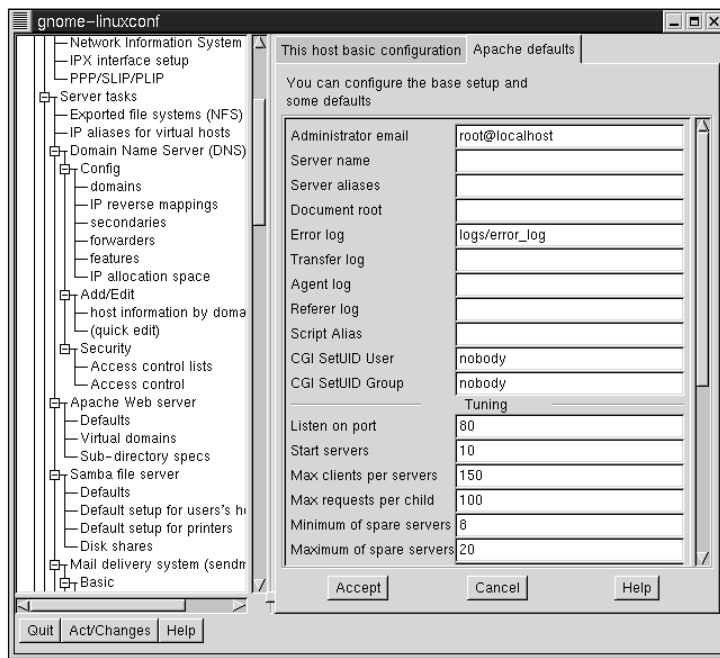


Figure C-2 Apache Web server configuration in LinuxConf

- Samba (SMB) server configuration, including several panels of options
- Sendmail e-mail server configuration, including several panels of options
- FTP server configuration
- User account setup and management (see Figure C-3)
- Password policy configuration and enforcement (see Figure C-4)
- File system management
- System initialization script configuration and run level management
- LILO boot loader configuration (several panels)
- Default run level selection

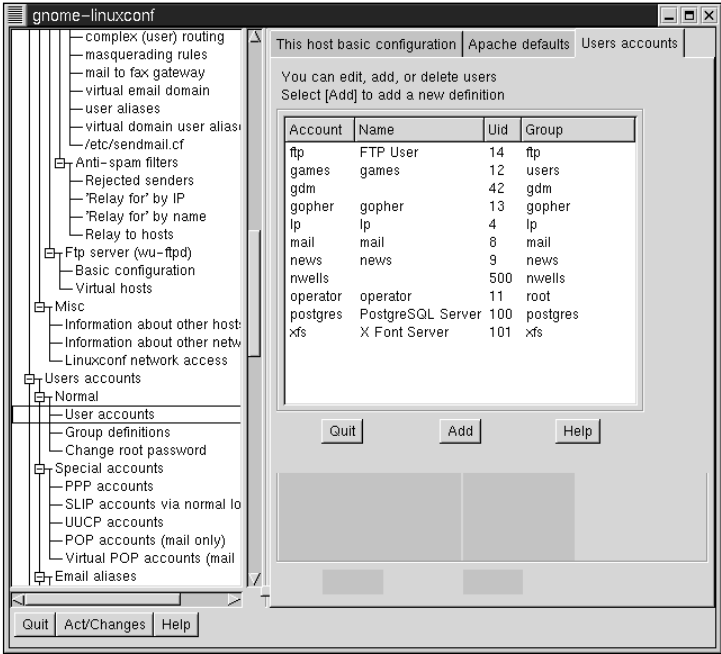


Figure C-3 User account creation and management in LinuxConf

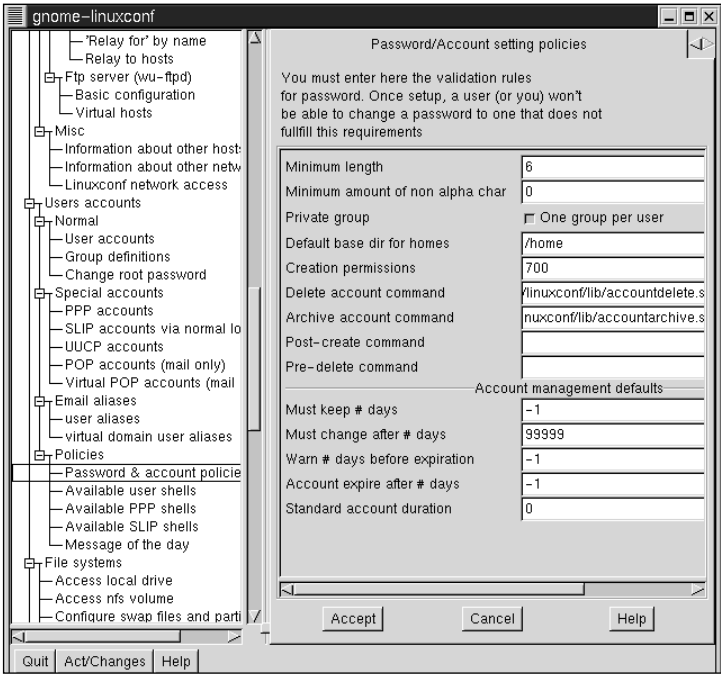


Figure C-4 Password policy configuration in LinuxConf

- LinuxConf network (Web browser) access control (see Figure C-5)
- Mounting and unmounting of file systems
- Superuser (`root`) access control
- System log configuration and tracking
- Date and time configuration

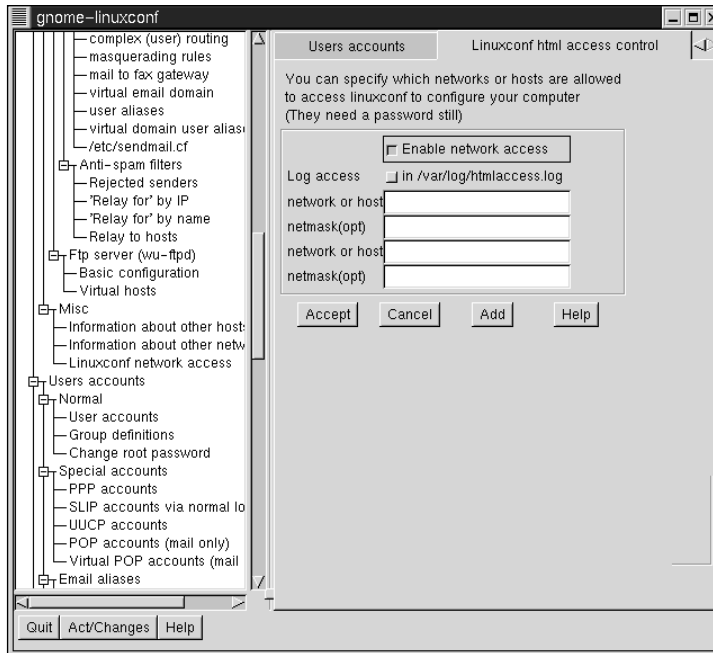


Figure C-5 LinuxConf network access configuration

In addition to the configuration options included with LinuxConf, Red Hat Linux provides several other configuration tools. Some of these tools are useful for nearly every Linux system, so it's unfortunate that they have not been incorporated into the LinuxConf program. Most of these tools are historical—they have been available in Red Hat Linux for several years. They are still included because no other tools have been implemented to replace their functionality. The most notable of these is the Control Panel, which you can access on the

system menu in the Gnome Desktop. The Control Panel is shown in Figure C-6. Its five buttons open windows that configure the following items:

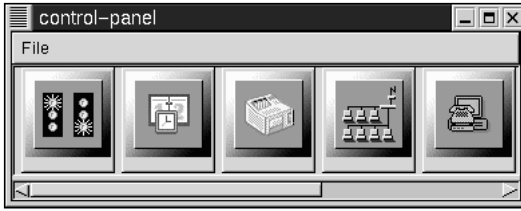


Figure C-6 The Red Hat Linux Control Panel

- Runlevel directory contents (which services are started in each run level)
- Time and date configuration
- Printer configuration, using the Printer Tool program
- Network configuration, using the `netcfg` program (see Figure C-7)

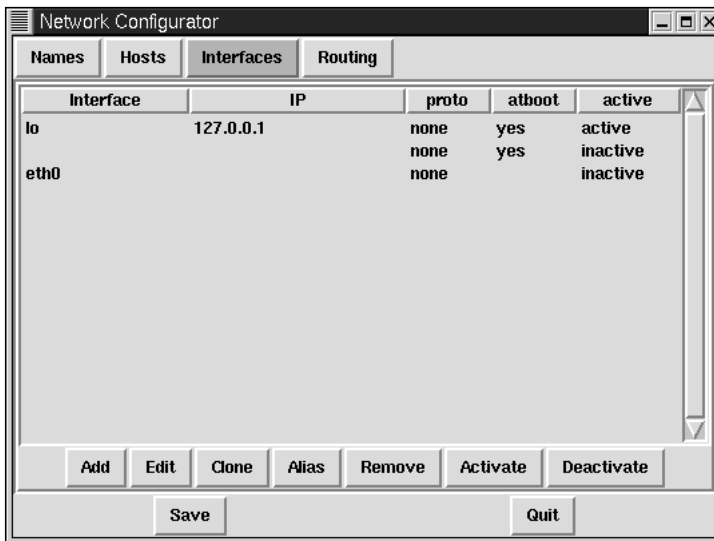


Figure C-7 The network configuration tool from the Red Hat Control Panel

- Modem configuration (see Figure C-8)

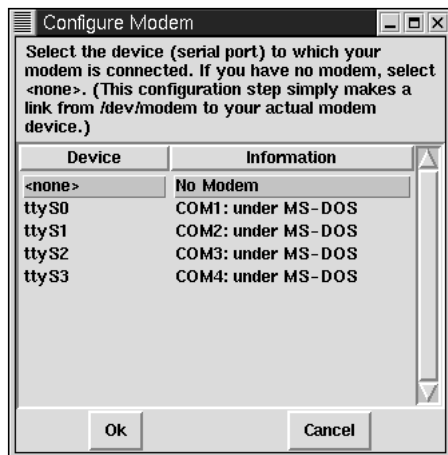


Figure C-8 The modem configuration tool from the Red Hat Control Panel

You can start any of these programs separately from other locations in the standard Gnome menu structure or from a command line (by entering the command `printtool`, for example).

A few additional Red Hat Linux utilities are also available from the `System` menu or from the menu labeled `AnotherLevel` menus under the `Administration` submenu. Some of these are standard X Window System utilities that, as with the Control Panel, have not been superseded by integrated utilities and so are still included somewhere in the convoluted menu structure. These include:

- Disk management
- Kernel configuration (see Figure C-9)
- CPU load monitor
- Font management (see Figure C-10)
- User listing (showing all logged-in users)

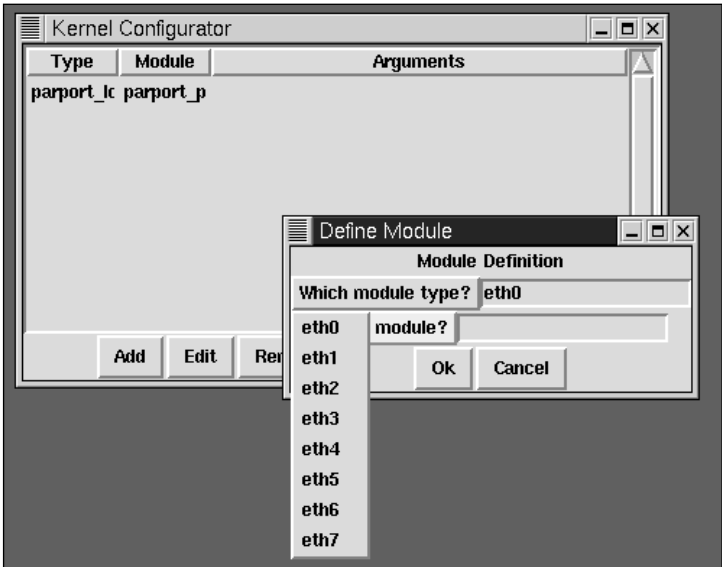


Figure C-9 The kernel module configuration tool in Red Hat Linux

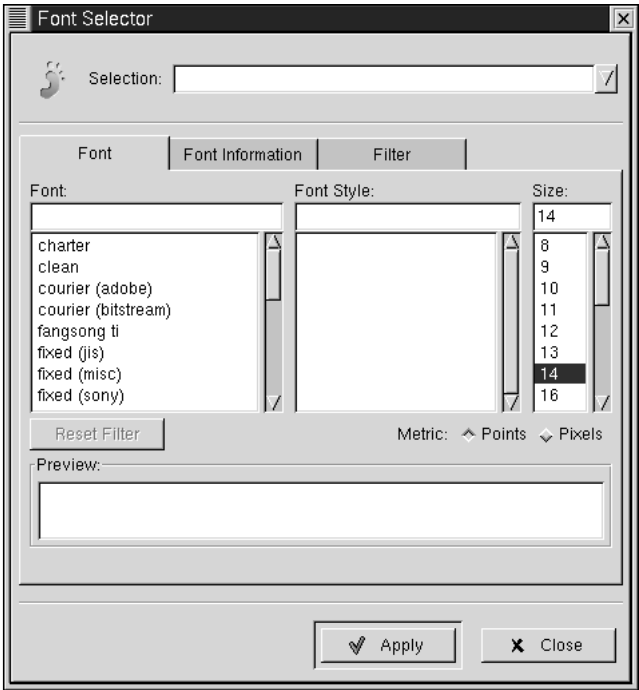


Figure C-10 The Gnome font management tool

Two excellent configuration utilities that are specific to Gnome are the Gnome System Monitor and the `GnoRPM` utility. The Gnome System Monitor is a process management utility. It is discussed at some length in Chapter 10. You can launch this utility from the `System` menu of Gnome or by entering the command `gtop` at a graphical command line. The `GnoRPM` command is used to manage RPM-format packages. While not as flexible as the multifunction `kpackage` utility described in the next section, `GnoRPM` provides a very nice interface for querying, installing, and deleting software packages.

The Gnome interface itself is configured mainly with the Gnome Control Center and the Menu Editor, both of which are available from the Gnome `Settings` menu. You use the Menu Editor to set up which applications and submenus are displayed in the Gnome menu. This task can become quite complex, so a graphical tool provides welcome assistance. The Control Center handles most other aspects of the configuration of Gnome. It includes the following configuration options:

- Background selection
- Screen saver configuration
- Theme selections (which include background, colors, and other display components)
- The default editor to use for text files
- The MIME data types that Gnome recognizes and how to respond to each (see Figure C-11)
- The keyboard bell
- Sound event associations

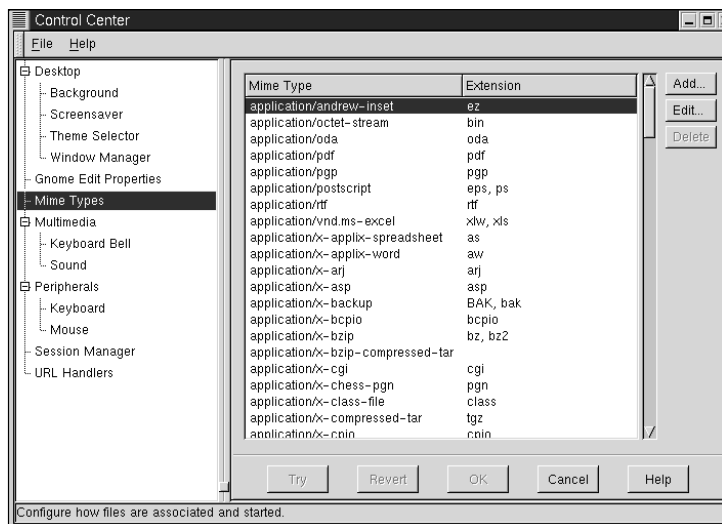


Figure C-11 MIME type configuration in the Gnome Control Center

- Keyboard and mouse configuration
- Session managers
- URL handlers



Don't confuse the Gnome Control Center, which configures the appearance of the Gnome Desktop, with the Red Hat Control Panel—a set of system administration tools such as Printer Tool.

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A key item missing from the preceding list is the window manager configuration. By default, Gnome uses the Enlightenment window manager. From the Control Center you can launch the Enlightenment configuration tool. This tool alone is more complex than the rest of the Gnome Control Center. It allows you to configure the following:

- How to drag windows (see Figure C-12)
- How to resize windows
- How to apply focus rules when moving between windows
- How many virtual desktops to support and how to move between them
- When to use pop-up tooltip help windows
- Special effects for window animation
- Complex background manipulation settings
- Detailed desktop theme configuration
- Keyboard shortcuts

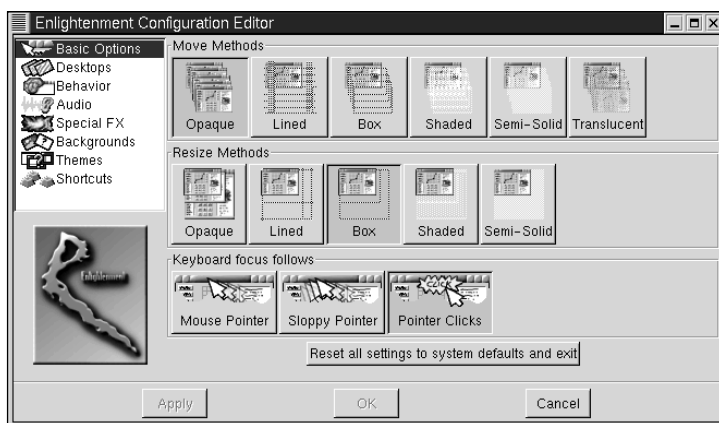


Figure C-12 Configuring window operations in Enlightenment

KDE UTILITIES

KDE is arguably farther along in development than the Gnome project. This fact is evident in the number of KDE-specific system administration tools. Sadly, no single, integrated system administration tool like LinuxConf is available for KDE, though you can easily run LinuxConf within the KDE Desktop on a Red Hat Linux system on which both are installed. (Using LinuxConf on a non-Red Hat system with KDE is a challenging task.)

KDE system administration tools are generally divided into two convenient locations: the `System` menu and the `Utilities` menu. The distinction is intended to be something like `root` user versus all other users, but it isn't that neat in practice. Still, having only the two locations to check makes it much easier for a new user to find programs in the KDE menus compared to Gnome menus.

Programs intended for the `root` user are located on the `System` menu. These include the following:

- Font management
- SystemV initialization script (run level service) configuration
- Task (process) management
- User creation and management

Programs intended for all users (to check system status or configure areas to which the user has access) are located on the `Utilities` menu. These include the following:

- Tape back-up tool
- Printer queue management
- Process management (very similar to the Task manager on the `System` menu)
- Menu editor (see Figure C-13)
- Archiver/compressed file manager
- RPM/deb/tar software package manager (not included with Red Hat Linux because the `GnORPM` utility is provided instead)

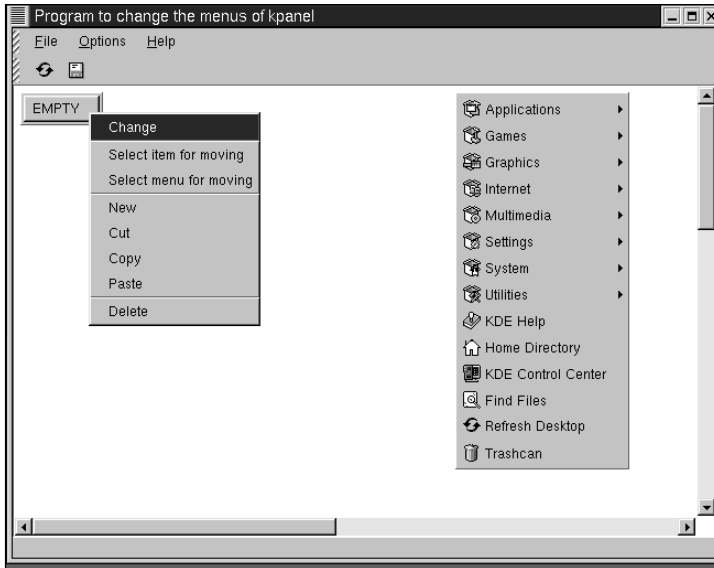


Figure C-13 Configuring KDE menus

A few additional network configuration and testing utilities are provided on the *Internet* menu of KDE. These are not nearly as complete as the LinuxConf network configuration tools, but they do provide some very useful functionality. These tools include:

- `kppp`, used to configure dial-up access
- Network utilities that allow you to run `ping`, `traceroute`, and others via a graphical interface (see Figure C-14)

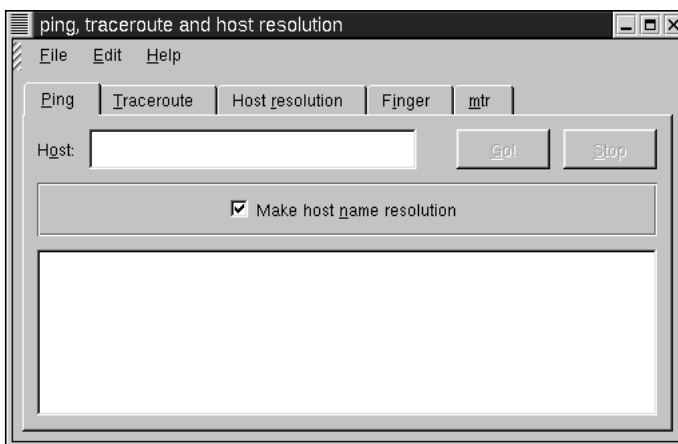


Figure C-14 Network testing utilities in KDE

In addition to the utilities mentioned thus far, KDE developers are working on numerous other programs that are not considered stable enough to include in a commercial Linux distribution. The following list includes some existing products that you can download and test; watch for their future stable release as part of a Linux product:

- `klilo` for LILO configuration
- `kcron` for graphically scheduling tasks using the `at` and `crontab` commands
- `kfstab` to manage file systems and mounting options
- `kdns` to set up and track a domain name service (DNS) server
- `ksamba` to set up and manage a Samba (SMB protocol) server that connects to Windows-based systems

The KDE Control Center is a one-stop interface for setting up the look and feel of the KDE interface. It also provides informational screens taken from the `/proc` file system for things like the interrupts, I/O ports, SCSI devices, PCI interfaces, and hard disk partitions. The following list shows the contents of the KDE Control Center. The Control Center interface operates much like the Gnome Control Center or the LinuxConf utility: you select an item from a hierarchical list on the left of the window; a panel with options appears on the right side of the window.

- Login manager configuration (`kdm` graphical login screen)
- File manager configuration
- Web browser configuration (as part of the file manager)
- Panel and main menu location, and related options
- Desktop background and wallpapers
- Desktop themes
- Screen saver
- Colors and fonts (see Figure C-15)
- Language to use for all applications
- Window styles
- Hardware information from the `/proc` file system (as described above)
- Keyboard usage and mouse configuration
- Keyboard shortcuts (global and per application)
- Mapping of system sounds to events
- Window appearance (title bar buttons, etc.)
- Results of various mouse actions in relation to window management (see Figure C-16)

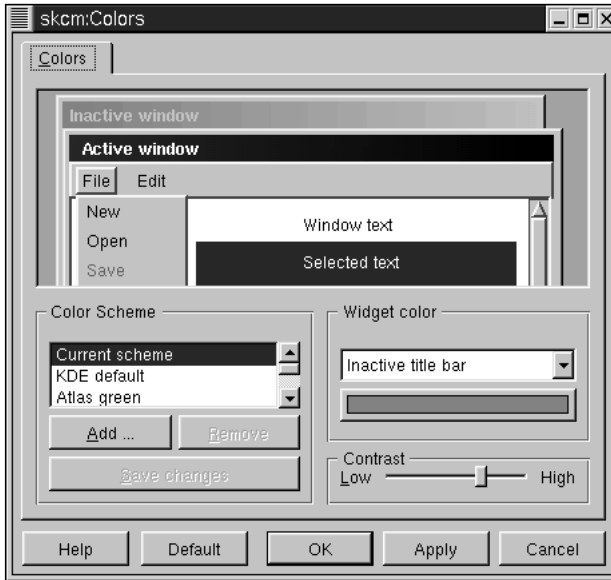


Figure C-15 Configuring colors in KDE

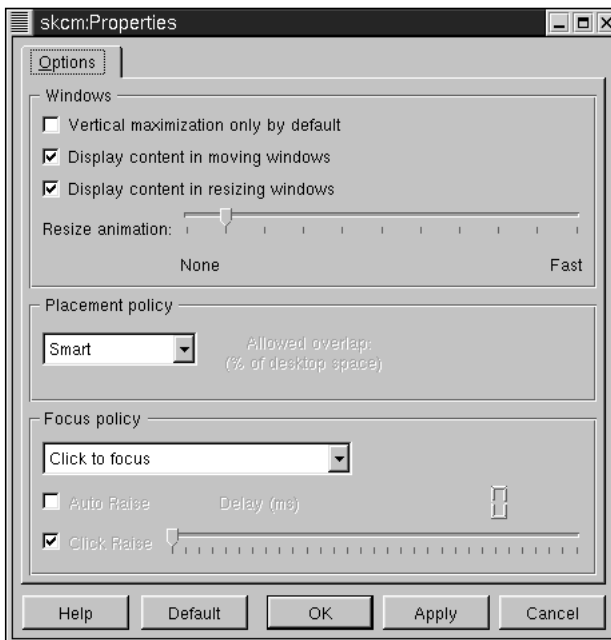


Figure C-16 Configuring window settings in KDE

Some Linux vendors—Corel in particular—are working to add system administration tools to the KDE Control Center so that a single unified interface for system administration can take root in the Linux community. Though licensing issues may affect the work of Corel, the results for users are very promising. For example, the Corel Linux product allows you to change passwords, configure printers, and set up all basic networking within a KDE Control Center panel.

With all of these graphical utilities available and many more being developed by talented individuals around the world, the prospects look bright for Linux to become easier to use for system administrators and more fully integrated into a single administrative interface in the coming years.

OTHER GRAPHICAL TOOLS

In addition to the system administration tools presented so far in this appendix, many other useful graphical programs are available to help make your work with Linux more productive. This section outlines a few of the most popular of these tools.

Office Productivity Suites

Although Linux is still used more as a network server than as a desktop workstation, several high-quality office suite packages are available for Linux. Three of these are described here.

ApplixWare is a collection of standard office productivity tools, including the following:

- A vector-based drawing program similar to Adobe Illustrator or CorelDRAW
- A word processor
- A spreadsheet
- A presentations package

ApplixWare has been available for many different UNIX platforms for many years. Applix, Inc., the developers of ApplixWare, created a Linux version of their popular suite. (See www.applix.com.) Although Applix is not as widely known as some other office suites, it is a full-featured, stable product that has been around for years. In fact, one of its strong points is that it was developed originally to run on UNIX, so it is very fast on Linux and doesn't rely on some of the more advanced graphical toolkits such as Qt or GTK that have only recently been used on Linux.

Another popular office suite for Linux is the StarOffice Suite. StarOffice was developed by StarDivision in Germany, but has since been purchased by Sun Microsystems. Sun makes the program available for free on their Web site (www.sun.com/staroffice). StarOffice is a very complete office suite, with an integrated desktop environment that attempts to provide everything you would need to work at a Linux-based desktop. The StarOffice environment features the following, all integrated into a single application:

- A word processor
- A spreadsheet

- Both vector and bitmapped drawing programs
- A presentations package with clip art
- A Web browser
- An HTML page editor
- A simple flat file database manager
- Internet newsgroup browsing
- FTP downloads
- The ability to send and read e-mail

StarOffice was written to run on many different platforms, including Microsoft Windows, OS/2, Solaris, and Linux. Because of this, it uses its own graphical libraries, allowing it to run on any version of Linux. However, this also makes StarOffice a large program. You should have a powerful system if you intend to run StarOffice on a regular basis. For example, 128 MB of RAM and a Pentium 400 MHz system would be appropriate.

The interface of StarOffice is designed to imitate Microsoft Office. If you are familiar with Microsoft products, using StarOffice should be very easy. Not all Microsoft features are represented in StarOffice, of course, but most are, and in the same menu structure found in Microsoft Office. Figure C-17 shows the StarOffice desktop.

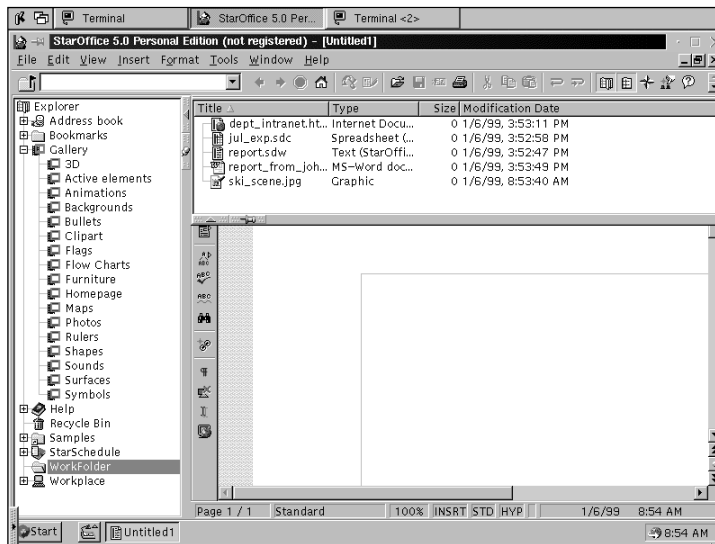


Figure C-17 StarOffice includes many office applications.

The Corel Office Suite is also available for Linux. Although the WordPerfect word processor has been available on Linux for years, the full office suite was only recently released. It includes:

- WordPerfect word processor
- Quattro Pro spreadsheet

- WordPerfect Presentations
- Central (a time-management tool similar to Microsoft Outlook)
- Paradox relational database management (available in some versions of Corel Office)

As with ApplixWare and StarOffice, the Corel Office applications are full-featured, commercial programs that you can use as desktop applications on Linux. Each of these tools also reads and writes files in Microsoft Office format. For example, if you have a friend who uses Microsoft Word, you can exchange files and read them using any of these three word processors (Applix, StarOffice, or WordPerfect).

Graphics Manipulation Tools

Creating bitmapped graphics such as icons, wallpapers, and illustrations is not a standard part of a system administrator's job description. But it's a task that you may nevertheless be asked to do often. Linux has a variety of tools to help you create and manage image files.

If you want to create new bitmapped images or edit existing images, you can use the popular Gimp program, which is similar in design to Adobe PhotoShop. Gimp includes advanced graphical filters, multiformat saves, layers, and other powerful features for professional designers. The creators of Gimp also developed the GTK+ graphical library on which the Gnome desktop was subsequently built.

Many other drawing programs are also available on Linux. Most of these have been used on UNIX systems for years and were simply converted to run on Linux. Examples include the X-Fig program and X-Paint. Gimp and X-Paint are included by default on Red Hat Linux. X-Fig is not, but is available for free download from various sites such as www.metalab.unc.edu. Figure C-18 shows Gimp with several image-editing tools.

You can manage existing images using other tools as well. These tools are not intended for designing new images but for organizing, studying, or presenting existing graphical files in many file formats. Examples of these tools include the graphical viewer XV and the format conversion package called netpbm. Both of these tools allow you to work with image files in dozens of formats.

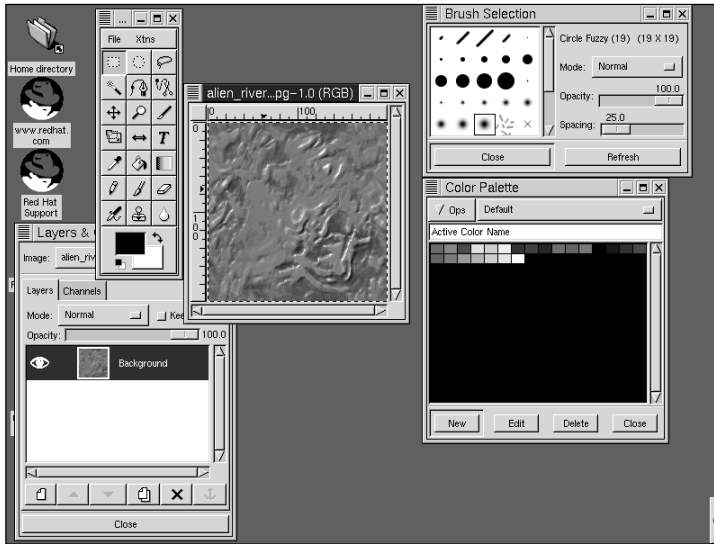


Figure C-18 Gimp includes many powerful image-editing tools.

Another image management tool that is included with Red Hat Linux is ImageMagick. This package includes commands that let you do all of the following:

- Animate a series of images
- Combine multiple images into one file
- Identify the format of an image file
- Convert an image to a different format
- Assemble multiple images into a montage
- Display images on screen
- Modify images, setting scale, rotation, etc.

